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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,155	01/30/2002	Yu-Chuan Lin	020009	8740

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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
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EXAMINER	
LE, AMANDA T	

ART UNIT	PAPER NUMBER
2634	6

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/062,155	LIN, YU-CHUAN	
	Examiner	Art Unit	
	Amanda T Le	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11,12,28 and 29* is/are allowed.

6)☒ Claim(s) *1-10,13,18-27,30 and 35-37* is/are rejected.

7)☒ Claim(s) *14-17 and 31-34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 7, 8, 10, 18, 19, 24, 25, 27, 35, 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (US2002/0101832 A1).

Chen et al discloses a noise power estimation method (paragraph [0055], paragraph [0064]) teaching the following claimed limitations:

In claims 1 and 18, "demodulating a received signal on an empty code channel" (Fig. 4, step 100, 102, Fig. 6), "determining a noise estimate from a resulting demodulated signal" (Fig. 4, step 104, Fig. 6);

In claims 2, 19, and 35, "empty Walsh code channel" (paragraph [0055], line 3);

In claim 7, 8, 24 and 25, "accumulating the determined energy of the demodulated signal over a frame" (Fig. 4, step 104);

In claims 10 and 27, "the communication device is a CDMA base station" (paragraph [0052]);

In claim 36, "a plurality of fingers, each finger adapted to demodulate a multipath replica of a desired signal and to provide outputs comprising finger noise components" (Fig. 6, 36), "a summer adapted to coherently sum the outputs from each of the plurality of fingers" (Fig. 6, 38).

3. Claims 1, 3-6, 18, 20-23 are rejected under 35 U.S.C. 102(a) as being anticipated by Yun et al.

Yun et al discloses an apparatus and a method for measuring noise power in CDMA mobile system teaching the following claimed limitations:

In claims 1, 3, 4 and 18, 20, 21 "demodulating a received signal on a Pilot Walsh code channel" (Fig. 6, 510), "determining a noise estimate form a resulting demodulated signal" (Fig. 6, 518);

In claims 5 and 22, "determining a magnitude of the demodulated signal" (Fig. 6, 516);

In claims 6 and 23, "accumulating the determined magnitude of the demodulated signal over a frame" (Fig. 6, 518).

4. Claim 13 is rejected under 35 U.S.C. 102(e) as being anticipated by Easton (US 5,764,687).

The applied reference has a common *** with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor

of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Easton discloses a mobile demodulator (Fig. 2, 3) comprising the following claimed limitations: "calculating a cross product of a received Pilot signal in a plurality of fingers of a rake receiver to generate a demodulated Pilot signal in each of the plurality of fingers" (146), "time aligning the demodulated signals from each of the plurality of fingers in a corresponding plurality of deskew buffers" (144), "summing the time aligned demodulated signals from the plurality of deskew buffers to generate a composite demodulated signal" (152).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al.

Yun et al discloses all the subject matters claimed, as stated above, except for "the communication device is a CDMA mobile station". Nonetheless, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

8. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Chrisikos and Han.

Chen et al discloses almost all the subject matters claimed, as stated above, except for "a cross product generator" and "a deskew buffer adapted to store time aligned outputs".

Nontheless, using cross-product generator and deskew buffers in rake receivers are known in the art at the time of the invention (see Chrisikos, Fig. 4a, 120 and Han, Fig. 1, 114s, respectively). It would have been obvious to one of ordinary skill in the art at the time of the invention to employ (i)deskew buffers in the RAKE receiver described by Chen et al to allow the combiner to sum the outputs of the fingers coherently, and (ii)cross-product generator when frequency discrimination is required in a particular design.

9. Claim 13 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chrisikos in view of Han.

Chrisikos discloses a CDMA receiver (Fig. 4a) having the following claimed limitations: "calculating a cross product of a received Pilot signal in a plurality of fingers of a rake receiver to generate a demodulated Pilot signal in each of the plurality of fingers" (114, 120), "summing the demodulated signals to generate a composite demodulated signal" (134). Chrisikos fails to disclose the "time aligning the demodulated signals from each of the plurality of fingers in a corresponding plurality of deskew buffers".

Han discloses a RAKE receiver arrangement wherein a deskew buffer is used for each of the plurality of fingers (Fig. 1, 114s). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Chrisikos's receiver using Han's teachings of the deskew buffers. Such modification would enable the combiner to coherently sum the output signals of the fingers.

Allowable Subject Matter

10. Claims 11, 12, 28, 29 are allowed.

11. Claims 14-17, 31-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: Prior art of record, taken individually or collectively, fails to disclose an apparatus or a method for noise estimation in a communication system that calculates a cross product of a received Pilot signal to generate a demodulated Pilot signal, determines the energy/magnitude of the

demodulated Pilot signal and accumulates the energy over a frame to produce a received noise estimate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda T Le whose telephone number is (703) 305-4769.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703) 305-6714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Amanda Le

AMANDA T. LE
PRIMARY EXAMINER